

# Pacific Standard

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## THE TURTLE LIBERATION IN EL SALVADOR

The Mangrove Association and its allies in El Salvador are showing that conservation works best if it has grassroots organizing behind it.

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A boy leaps from the flat-bottomed boat onto a spit of sandy beach along [El Salvador](#)'s Pacific Coast. A few dozen others—fishermen, frenetic children, harried mothers in tank tops and flip-flops—disembark behind him. They've come from the nearby hamlet of Isla Montecristo, where cashew trees hug carless streets and porches hang with hammocks. They've come to witness an uncommon occasion. They are here for the turtle liberation.

Gio Díaz, a lithe young man in a blue bathing suit and a black baseball cap, turns off the boat's engine and wades ashore. He leads the group to a rudimentary hut overlooking the ocean, its tin roof offering respite from the simmering January sun. Díaz and a few older men pull six large green buckets from inside and, within seconds, a small army of children descends on them.

The kids, who've come by boat from the village, crowd around the buckets. They giggle and squeal and gently touch the teeming creatures contained inside. There are hundreds, perhaps thousands, of tiny, sleek black-green sea turtles. The soft slapping of their flippers sounds like gentle rain on a roof.

These infant [turtles](#) are lucky to be alive. They're olive ridleys, and, like the six other sea turtle species still alive on Earth, they face harrowing threats to their survival. From the destruction of their coastal habitat, climate change, and entanglement in marine debris, their numbers have declined by at least 30 percent in recent decades, and the [International Union for Conservation of Nature](#) declares them vulnerable to extinction on its Red List of Threatened Species. They face extra peril in El Salvador, where the consumption of turtle eggs is a long-time culinary tradition and people comb the beach collecting eggs to sell at market.

In this part of the country, though, baby turtles have bodyguards.

Díaz, who has a home and a family in Isla Montecristo too, is one of them. At 26, he leads a program that pays local collectors for their turtle eggs and then incubates the eggs in a meticulously tended plot. He and another local man personally guard the plot year round, sleeping in a little hut with a pistol or a shotgun by their sides. "I am here 365 days a year, seven days a week, 24 hours a day," he says, with a dash of hyperbole and smiling with pride. "I live at the beach."

Díaz works for a non-profit called the Mangrove Association, which helps lead a Salvadoran social movement in this flood-prone, war-scarred, ecologically rich region. The association and its allies care for turtles, yes, but they also promote sustainable fishing practices, build public-health facilities, run a radio station, support organic agriculture, and back leftist [Salvadoran political causes](#). Above all, though, they protect and defend the mangrove forests that the turtles call home.

Isla Montecristo is just one of hundreds of small Salvadoran communities that rely on the mangrove forest and its riches for their survival. Without the trees and their enormous root systems, the ocean would wash the town and its turtle hatchery away.

"Let's go," says Díaz, as he and the other men shoulder the green buckets and slog across the beach. The children dart ahead, joyful anticipation etched on each face. The sun sears. The water roars. The little turtles prepare to meet the sea.

Even before the end of El Salvador's vicious civil war in 1992, refugees and ex-combatants started resettling towns and villages on the country's coast. Isla Montecristo—which is actually a peninsula, and unrelated to the famous count—was a former training camp where members of the leftist insurgency taught young peasants how to wage guerilla war against the United States-backed oligarchy that ruled the country. Five miles inland, to the northwest, is another town called Ciudad Romero, where the Mangrove Association currently maintains its radio station and runs a community center. Refugees founded the town a few years before the armistice. They named it after Archbishop Óscar Romero, the liberationist cleric who was assassinated at the height of the armed conflict.

The Mangrove Association has built its movement among communities like these. Founded in 1999, a year after Hurricane Mitch devastated the region, the association, with support from its U.S.-based partner EcoViva, provides institutional support to more than 25 local grassroots committees working for societal resilience and self-reliance in this unforgiving landscape. Coastal El Salvador, after all, is tough country. From the Jiquilisco Bay to the Lempa River and beyond, the region experiences frequent flooding, storm surges, and hurricanes. Species extinction, fishery degradation, water pollution, and deforestation all pose long-term threats to people's livelihoods here. Climate change is only intensifying such perils. Survival requires solidarity.

"Our communities learned," says Estela Hernández, a former Mangrove Association leader who now serves in the Salvadoran legislature, "that it is necessary to get organized."

At dawn one day during the January dry season, a pick-up truck pulls out of the radio-station grounds in Ciudad Romero. Two men, wearing heavy boots and armed with machetes, climb into the truck bed and talk among themselves as the vehicle snakes its way toward the coast, bouncing along a single dirt track until it reaches the edge of a vast swamp towering with mangrove trees.

"If this ecosystem didn't exist, this natural wealth wouldn't be here. Nothing would live here," says José Antonio Hernández, a natural resource ranger working for both the Mangrove Association and the country's environmental ministry. The forest provides crabs for the crabbers, he explains. It provides fish for the fishermen. It provides firewood for families. It provides habitat for turtles. And it offers an irreplaceable barrier against floods and storm surges and all sorts of natural disruptions.

Problem is, mangrove forests in El Salvador, like most mangroves across the globe, are in trouble. The Salvadoran Ministry of Environment and Natural Resources estimates that the country has lost more than 60 percent of its mangrove forest since 1950 to coastal development, agricultural pollution, wartime damage, and rising sea levels, among other causes. The mangrove forest that surrounds the Jiquilisco Bay, a rich estuary where the association does most of its work, is the largest remnant. In fact, at 20,000 hectares, it is the largest mangrove forest left in Central America.

That's why Hernández is out here. As a natural resource ranger, he is charged with guarding the forest against timber poachers, teaching locals how to sustainably use its resources, and leading ecological restoration efforts. Bringing mangroves back to life is his métier.

Along with a fellow ranger, Hernández heads deeper into the wild. He skirts swampy ground, skitters across a makeshift bridge over open water, and maneuvers through a complex network of shoulder-high mangrove roots. Finally, he reaches his destination, a slowly regenerating swath of denuded land roasting in the sun.

"They are the fruit" of our labor, says Hernández as he walks atop the moist soil, pointing to dozens of mangrove saplings growing up through the mud.

Here, in a 120-acre plot of deforested wasteland, he explains, the Mangrove Association first implemented a labor-intensive but highly effective "ecological mangrove restoration" program, known locally as REM. For a month in early 2012, 40 movement members and local volunteers gathered at this site and dug enormous canals connecting it to surrounding swampland.

Though it's difficult to do on a grand scale, this is how REM works. Unlike other mangrove restoration methods, which rely on traditional forestry techniques such as monoculture planting, REM is firmly rooted in ecological science. Mangrove trees can't grow anywhere. They require periodic inundation by brackish water; they are sensitive to tidal flows, flooding patterns, soil type, and elevation. Developed by Roy Lewis, a Florida-based biologist and environmental consultant, REM seeks to address this reality. The technique's practitioners start by studying local conditions, and using this knowledge to heal landscapes, often by rebuilding canals and natural waterways that have been damaged or drained or otherwise degraded. Manual laborers or heavy machinery do the work: They clear debris and dig trenches in unhealthy habitats to help water flow back in. Once the hydrology is restored, nature itself is left to do the mangrove replanting. As the tides rise, they carry mangrove seeds through the newly created canals and trenches, allowing them to recolonize and restore the forest. Voilà.

Though there are few large-scale studies of the technique's efficacy, REM seems to work much better than traditional restoration methods. Consider a case study out of Indonesia: The small village of Tiwoho lost 20 hectares of biodiverse mangrove forest to a clearing project in 1991. From 1995 to 2004, the country's government attempted to replant the area six times using traditional planting techniques. Every effort failed. In 2003, with support from a U.S.-based group called the Mangrove Action Project, the village tried again, but this time using REM. Today, Tiwoho's restored forest is thriving, and tens of thousands of individual mangrove trees have returned to the 20-hectare area.

Because of its effectiveness and heavy emphasis on community involvement, REM has become popular in El Salvador too. The Mangrove Association recently announced plans for a major new \$2.5 million restoration initiative in the Jiquilisco Bay. The group has also focused on spreading its knowledge to others: Thanks to association-sponsored trainings, including a major conference in 2011, both the national government and a major regional conservation organization called the Fund for the Initiative for the Americas now implement REM across El Salvador. Together these groups are in the midst of at least a dozen such projects on more than 200 acres, but it all started here, in this muddy swampland that Hernández is treading through.

As a solitary vulture suns itself in a nearby tree, Hernández bends toward the mud and admires a tiny sprout pushing up through the decayed remnants of a mangrove trunk.

"Yes, yes," he says, pleased with the progress. "These are coming back to life."

Back on the beaches near Isla Montecristo, Gio Díaz draws a line in the sand and the kids form a long row behind it, facing the ocean. Díaz marches up and down the line with a big green bucket in his arm and places one squirming turtle in each outstretched hand. The children are mesmerized. They can hardly contain themselves. In this community where national liberation was once the common cause, it's time now for turtle liberation.

"AHORA!" Díaz yells. "NOW!"

The kids drop to their knees and gently place the turtles on the beach, pointing their beaks toward the breaking waves. The infant olive ridleys know just what to do.

In fits and starts they waddle toward the water, dimpling the sand with diminutive tracks. The children go back for another turtle, and another, and another. In short order, the beach is alive with a procession of reptiles marching in a single, instinctive direction.

Then the waves hit. The water surges onto the sand and overtakes the turtles and they tumble down the beach and are swept out to sea. Those few who survive to adulthood will seek someday to return to lay their eggs on this same patch of shore. Salvadorans like Díaz and Hernández are doing all they can to ensure that the forests and the beaches and the people will still be here to greet the turtles when they do.

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